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CLAIMS

1. A process for controlling selection of a modulation and coding selection method to be used by a base transceiver station to transmit data packets over a forward shared channel to a mobile station comprising:

storing information at the base transceiver station, the information containing modulation and coding selection methods which may be selected to transmit data packets over the forward shared channel to the mobile station;

receiving from the mobile station at the base transceiver station a quality indication of transmission of data packets over the forward channel to the base station; and

selecting a modulation and coding selection method from a plurality of modulation and coding selection methods which may be used to transmit data packets on the forward channel dependent upon the received quality indication.

2. A process in accordance with claim 1 wherein:

the information correlates modulation and coding methods with frame error rate and throughput determined by the mobile station.

3. A process in accordance with claim 2 wherein:

selection of one of the modulation and coding selection methods optimizes transmission of the data packets.

4. A process in accordance with claim 1 wherein:

the quality indication of transmission comprises a ratio of Ec (pilot channel strength) to Nt (noise from other cells).

5. A process in accordance with claim 2 wherein:

the quality indication of transmission comprises a ratio of Ec (pilot channel strength) to Nt (noise from other cells).

6. A process in accordance with claim 3 wherein:

the quality indication of transmission comprises a ratio of Ec (pilot channel strength) to Nt (noise from other cells).

7. A process in accordance with claim 2 wherein:

the quality indication of transmission comprises an average of frame error rate or throughput calculated by the mobile station over a plurality of data transmissions over the forward channel from the base transceiver station to the mobile station.

8. A process in accordance with claim 3 wherein:

the quality indication of transmission comprises a function of frame error rate or a function of throughput calculated by the mobile station over a plurality of data transmissions over the forward channel from the base transceiver station to the mobile station.

9. A process in accordance with claim 5 wherein:

the quality indication of transmission comprises a function of frame error rate or a function of throughput calculated by the mobile station over a plurality of data transmissions over the forward channel from the base transceiver station to the mobile station.

10. A process in accordance with claim 6 wherein:

the quality indication of transmission comprises a function of frame error rate or a function of throughput calculated by the mobile station over a plurality of data transmissions over the forward channel from the base transceiver station to the mobile station.

11. A process in accordance with claim 2 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

12. A process in accordance with claim 3 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

13. A process in accordance with claim 5 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

14. A process in accordance with claim 6 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of

a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

15. A process in accordance with claim 7 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

16. A process in accordance with claim 8 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

17. A process in accordance with claim 9 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

18. A process in accordance with claim 10 wherein:

the quality indication of transmission of data packets contains a trigger that either frame error rate information or the throughput information is to be used in selecting a modulation and coding selection method and an indication of pilot signal strength with the pilot signal strength being used in the selection of a modulation and coding selection method based upon either the designated frame error rate information or the designated throughput information.

19. A process in accordance with claim 11 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

20. A process in accordance with claim 12 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

21. A trigger in accordance with claim 13 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

22. A process in accordance with claim 14 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

23. A process in accordance with claim 15 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

24. A process in accordance with claim 16 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

25. A process in accordance with claim 17 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

26. A process in accordance with claim 18 wherein:

the trigger in the quality indication of transmission to use the frame error rate information to select the modulation and coding selection method occurs when the data packets received on the forward channel are determined by the mobile station to be sensitive to frame error rate.

27. A process in accordance with claim 11 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

28. A process in accordance with claim 12 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

29. A process in accordance with claim 13 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

30. A process in accordance with claim 14 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

31. A process in accordance with claim 15 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

32. A process in accordance with claim 16 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

33. A process in accordance with claim 17 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

34. A process in accordance with claim 18 wherein:

the trigger in the quality indication of transmission to use the throughput information to select the modulation and coding selection method occurs when the data received on the forward shared channel are determined by the mobile station to be sensitive to throughput.

35. A process in accordance with claim 1 wherein:

the receiving at the base transceiver station is over a reverse channel and the stored information is stored in two tables.

36. A process in accordance with claim 35 wherein:

the channel is R-QIECH.

37. A process for scheduling the transmission of data packets from a base transceiver station over a forward shared channel to a plurality of mobile stations comprising:

receiving at the base station transceiver information from each of the plurality of mobile stations derived by each mobile station from data packets transmitted on the forward shared channel to each of the plurality of mobile stations which is a function at least two of a plurality of parameters, the parameters being throughput of the data packets, frame error rate of the data packets, delay of the data packets and subscriber priority; and

scheduling a next transmission of data packets to one of the plurality of mobile stations based upon calculating a scheduling quantity for each of the plurality of mobile stations which is a function of at least two of the plurality of the parameters which satisfies a scheduling criteria to determine which mobile station is allocated the next transmission of data packets.

38. A process in accordance with claim 37 wherein:

the next transmission is assigned to a mobile station which qualifies under the scheduling criteria by performing a comparison of all calculated scheduling quantities for the mobile stations.

39. A process in accordance with claim 37 wherein;

the scheduling quantity is a function of all of the parameters.

40. A process in accordance with claim 38 wherein;

the scheduling quantity is a function of all of the parameters.

41. A process in accordance with claim 37 wherein:

scheduling quantity is a function of a ratio R(req)/R(avg), where R(req) is the required throughput of the data packets and R(avg) is the average throughput of the data packets, a function of a ratio FER(avg)/FER(req) where FER(avg) is the average frame error rate of the data packets and FER is the required frame error rate of the data packets, a function of a ratio DELAY(avg)/DELAY(req) where DELAY(avg) is the average transmission delay between transmission of the data packets and DELAY(req) is the maximum permissible transmission delay of the data packets and the subscriber priority is a saved subscriber priority of a priority of data transmission between subscribers of the mobile stations.

42. A process in accordance with claim 38 wherein:

scheduling quantity is a function of a ratio R(req)/R(avg), where R(req) is the required throughput of the data packets and R(avg) is the average throughput of the data packets, a function of a ratio FER(avg)/FER(req) where FER(avg) is the average frame error rate of the data packets and FER is the required frame error rate of the data packets, a function of a ratio DELAY(avg)/DELAY(req) where DELAY(avg) is the average transmission delay between transmission of the data packets and DELAY(req) is the maximum permissible transmission delay of the data packets and the subscriber priority is a saved subscriber priority of a priority of data transmission between subscribers of the mobile stations.

43. A process in accordance with claim 39 wherein:

scheduling quantity is a function of a ratio R(req)/R(avg), where R(req) is the required throughput of the data packets and R(avg) is the average throughput of the data packets, a function of a ratio FER(avg)/FER(req) where FER(avg) is the average frame error rate of the data packets and FER is the required frame error rate of the data packets, a function of a ratio DELAY(avg)/DELAY(req) where DELAY(avg) is the average transmission delay between transmission of the data packets and DELAY(req) is the maximum permissible transmission delay of the data packets and the subscriber priority is a saved subscriber priority of a priority of data transmission between subscribers of the mobile stations.

44. A process in accordance with claim 40 wherein:

scheduling quantity is a function of a ratio R(req)/R(avg), where R(req) is the required throughput of the data packets and R(avg) is the average throughput of the data packets, a function of a ratio FER(avg)/FER(req) where FER(avg) is the average frame error rate of the data packets and FER is the required frame error rate of the data packets, a function of a ratio DELAY(avg)/DELAY(req) where DELAY(avg) is the average transmission delay between transmission of the data packets and DELAY(req) is the maximum permissible transmission delay of the data packets and the subscriber priority is a

saved subscriber priority of a priority of data transmission between subscribers of the mobile stations.

45. A process in accordance with claim 37 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

46. A process in accordance with claim 38 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

47. A process in accordance with claim 39 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

48. A process in accordance with claim 40 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

49. A process in accordance with claim 41 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

50. A process in accordance with claim 42 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

51. A process in accordance with claim 43 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

52. A process in accordance with claim 44 wherein:

the scheduling quantity is SCHDL(i) and

SCHDL(i)=(k1*R(req)/R(avg)+k2*

FER(avg)/FER(req)+k3*DELAY(avg)/DELAY(req))*pri

where ki, k2 and k3 are normalization factors which are configurable at the base transceiver station and pri is a requested priority subscription priority.

53. A process for a base transceiver station to resolve whether frame error rate or throughput of data packet transmission to a mobile station over a forward shared channel should control a selection of which of a plurality of modulation and coding selection methods is to be used to transmit the transmission of data packets over the forward shared channel to the mobile station comprising:

computing a frame error rate of data packet transmission to the mobile station and comparing that calculated frame error rate to a threshold frame error rate;

computing a throughput data rate of data packet transmission to the mobile station and comparing that calculated throughput data rate to a threshold throughput data rate;

generating a trigger at the mobile station which identifies which of frame error rate or throughput is to be used to control selection of a modulation and coding selection method to be used at the base transceiver station to transmit data packets on the forward shared channel to the mobile station; and

transmitting the generated trigger to the base transceiver station where the trigger is used at least as part of a selection criteria for choosing one of a frame error rate or a throughput dependent modulation coding selection method used to transmit the data packets on the forward channel to the mobile station.

54. A system which schedules the transmission of data packets comprising:

a base station transceiver and a plurality of mobile stations; and wherein

the base station transceiver receives information from each of the plurality of mobile stations derived by each mobile station from data packets transmitted on the forward shared channel to each of the plurality of mobile stations which is a function of at least two of a plurality of parameters, the

parameters being throughput of the data packets, frame error rate of the data packets, delay of the data packets and subscriber priority; and

the base station transceiver schedules a next transmission of data packets to one of the plurality of mobile stations based upon calculating a scheduling quantity for each of the plurality of mobile stations which is a function of at least two of the plurality of the parameters which satisfies a scheduling criteria to determine which mobile station is allocated the next transmission of data packets.

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55. A system comprising:

a base transceiver station and a mobile station; and wherein

the base transceiver station resolves whether frame error rate or throughput of data packet transmission to the mobile station over a forward shared channel should be used to control a selection of which of a plurality of modulation and coding selection methods is to be used to transmit data packets over the forward shared channel to the mobile station with the base transceiver station computing a frame error rate of data packet transmission to the mobile station and comparing the calculated frame error rate to a threshold frame error rate and a throughput data rate of data packet transmission to the mobile station and comparing the calculated throughput data rate to a threshold throughput data rate, and the mobile station generates a trigger which identifies which of frame error rate or throughput is to be used to control selection of a modulation and coding selection method to be used at the base transceiver station to transmit

data packets on the forward shared channel and the generated trigger is transmitted to the base transceiver station where the trigger is used at least as part of a selection criteria for choosing selection of one of a frame error rate or a throughput modulation and coding dependent method used to transmit the data packets on the forward channel to the mobile station.

56. A process in accordance with claim 8 wherein:

the function of frame error rate is an average and the function of throughput is an average.